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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,334	08/13/2001	Seiichi Miyazaki	110386	2494

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EXAMINER

FOURSON III, GEORGE R

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 08/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/913,334

Applicant(s)

MIYAZAKI, SEIICHI

Examiner

George Fourson

Art Unit

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-42 is/are pending in the application.
- 4a) Of the above claim(s) 21-37, 41 and 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 38-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicant's election with traverse of the invention of claims 38-40 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that unity of invention exists between the recited inventions. This is not found persuasive because the methods of claims 38-40 are not specially adapted for manufacture of the products of claims 41 and 42 because the method does not inherently make the products in that the methods are open to performing steps which would introduce heavy metal elements onto the surface of the semiconductor wafer or, alternatively, the method as recited would not be sufficient to reduce the amount of heavy metal contamination due to evaporation of a volume the etchant on the surface thereby concentrating the heavy metals beyond the amount in the etchant, for example.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 39 and 40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no disclosure in the specification as originally filed of the process of etching a silicon wafer such that the results recited in claims 39 and 40 are obtained generically. There is only seen support for a process such as that recited in claim 38 wherein stainless steel is immersed in an alkali aqueous solution.

See MPEP 2163 I, especially part A.

Claims 39 and 40 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for etching silicon as recited in claim 38, does not reasonably provide enablement for recitation of etching silicon to obtain the results recited in claims 39 and 40 generically. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. As discussed above, there is no description of other processes and therefore insufficient guidance to enable one of ordinary skill in the art to determine suitable methodology to obtain the recited results.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson.

Thompson discloses etching of silicon using an etchant consisting of KOH and water or further including isopropyl alcohol wherein the etching is carried out in a stainless steel container (col.2 and col.3).

The reference does not disclose the duration of the etch recited in claim 38 or the duration claimed by way of functional limitations in claims 39 and 40.

One of ordinary skill in the art would have been led to the recited duration through routine experimentation of the concentration of etchants (fig.1), the temperature of the etching solution (col.2, lines 67-68) or the desired thickness of silicon to be etched. In view of the instant disclosure the results recited in claims 39 and 40 are believed to be inherent in an etch having the duration of claim 38.

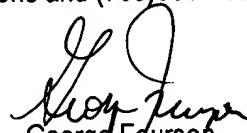
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Alternatively, it would have been within the scope of one of ordinary skill in the art to store the etchant in the stainless steel container for the recited period in view of the disclosure that the material is not leached by KOH and thus would serve as a suitable material of a storage container (col. 3, lines 1-9).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956. See MPEP 203.08.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner George Fourson whose telephone number is (703) 308-2544. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794. The fax number for this group is (703)308-7722 (or extensions 7724, 3431 or 3432) for regular communications and (703)308-7382 for after final communications.


George Fourson
Primary Examiner
Art Unit 2823

GFourson
August 15, 2003